



BROEN ENGINEERED VALVE GROUP

BROEN – AW CATALOG



About us

BROEN Group established in 1948 is one of the largest global valve manufacturer. BROEN has 6 production plants in Europe, Russia, North America and employs 900 people. The company has branches in, and export its products to over 50 countries in the world.

BROEN's annual production exceeds 1 million ball valves covering a wide range of sizes and pressures. Broen Oil & Gas, formerly ZAWGAZ, joined the BROEN Group in 2008 and has more than 30 years of experience in the design, production, supply and service of ball valves for the oil and natural gas industries.

BROEN is a part of the stock listed industrial group Aalberts Industries, which specializes in delivering a wide range of technologically advanced products and systems to many industries. Aalberts Industries own more than 140 companies and employ 12 000 people all over the world. BSM valves and Conbraco companies, who belong to Aalberts Industries group, also manufacture valves for the oil and natural gas markets and compliments the BROEN product portfolio.





Applications

The BROEN ball valves are dedicated for production, processing, transmission and distribution in the gas, oil, petrochemical, chemical, heating and other industries and for a wide range of fluids, such as:

Gas

NATURAL GAS
PROPANE
BUTANE
OTHER GAS MIXTURES



Since introduction of BOG valves for natural gas we have successfully delivered our products to installations and pipelines operated by largest companies in the CEE countries, i.e. PGNiG SA/ Gaz System SA (Poland), SSP (Slovakia), MOL (Hungary). Constantly developed product portfolio, sophisticated technological solutions, timely deliveries and high quality of customer service – all these features guarantee satisfaction of our Customers.

Fuels

DIESEL LPG GASOLINE JET A1



BOG valves have been faultlessly operating for more than 10 years in LPG installations of companies like Orlen Gaz, Gaspol, Amerigas (former Shell Gas) in Poland, Lukoil in Kaliningrad (Russia), Latvijas Propana Gaze or Intergaz in Latvia. We supply ball valves for gas/LPG stations, transloading terminals, storage tanks and tank trucks/railcars. We are preferred supplier to all locations where durability, safety and operational reliability is of highest importance. BOG for last 6 years has been certified supplier of ball valves to fuel installations for NATO army bases, including also installations for aviation fuel Jet A1. We have been also supplying products to fuel bases for civil airports, i.e. for company Petrolot operating at the Warsaw airport.

Oil

OIL
LIGHT CRUDE OIL
PENTANE/HEXANE
OTHER OIL PRODUCTS



Similarly to fuel applications, our ball valves are best solution for oil and oil-derivatives installations. Faultless and smooth operation allowed for application in both refineries and oil-storages of such companies as Lotos or Orlen, as well as in heavy-duty oil-heating systems. Sophisticated technological solutions, expertise and satisfaction of our current customers allow for planning of further development of this segment and guarantee our future customers high quality of products and service.



Production program

The quarter Turn valves are designed and produced by BROEN and are recommended to be used as isolating valves. The valves have a low fluid resistance and consequently, high KV values.

The valves with self-lubricating seats are recommended for a wide range of industrial applications.

The metal seated valves are recommended for severe-duty service industrial applications.

The trunnion mounted BROEN ball valves are designed to equally seal in both directions and are fitted with advanced dependable spring loaded seats and optionally with a bleed port. This offers the highest mechanical and functional reliability on the market.

Design for either above or underground services, the BROEN ball valves substantially exceed common requirements for standard, as well as for severe conditions industrial applications.



API 6D FULL BORE SIZE 1/2" – 32" CLASS 150 – 600 TEMP. -20°F TO 302°F





Quality standards and certification

BROEN API 6D range of products conform to industry standards set by the American Petroleum Institute, therefore valves are allowed to bear the Official API Monogram. BROEN is a certified producer of valves constituting elements of transmission and technological pipelines for hazardous flammable liquids and gas media.

The Fire Safe construction of our valves is certified for both, floating and trunnion mounted ball designs. The Double Block and Bleed functions of Broen Oil & Gas ball valves are certified by Bureau Veritas, as their function is defined by API 6D and ISO 14313. BROEN ball valves are PED 2014/68/UE certified, which means that quality control for the design, manufacture, final inspection and testing of pressure equipment satisfy the provisions of the Directive. Consequently, BROEN ball valves are CE marked. BOG for last 6 years has been certified supplier of ball valves to fuel installations for NATO army bases, including also installations for aviation fuel Jet A1.



























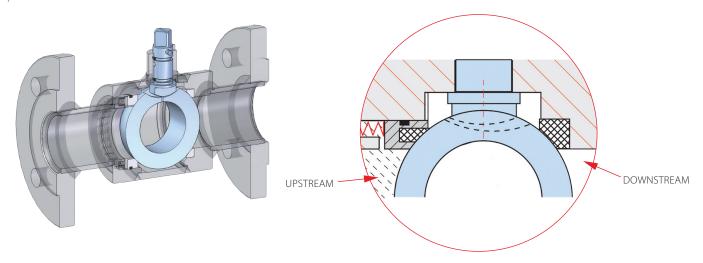
Description of main valve features

Linear and volumetric compensation for floating ball design

The linear and volumetric compensation system prevents the buildup of excessive pressure in the cavity, which may result from external environment temperature increase.

The phenomenon may cause higher opening torque, the valve keeping full tightness for a shorter time, or worse, the ball getting stuck between the seat.

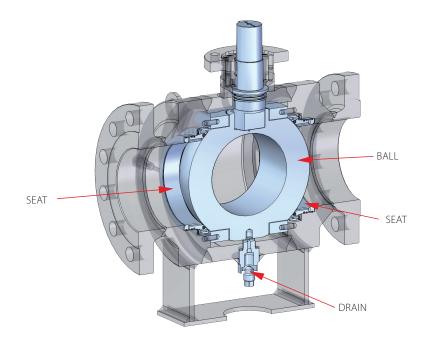
The linear and volumetric compensation system is a standard solution for all our floating ball type products and is most effective in case of LPG and other liquid media.



Double block and bleed (DBB)

The DBB system ensures the simultaneous upstream and downstream sealing, while also permitting the release of the overpressure in the cavity, in both, fully open and fully closed position.

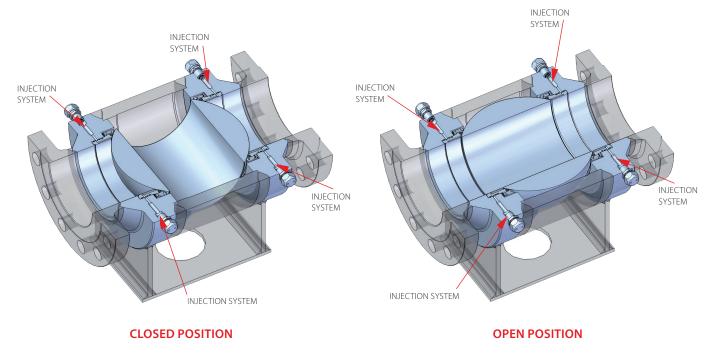
The drain allows the pressure in the cavity to be released manually. This enables the replacement of the upper stem sealing, as well as the tightness of the valve to be checked, without the need to shut down the pipeline.



Injection system

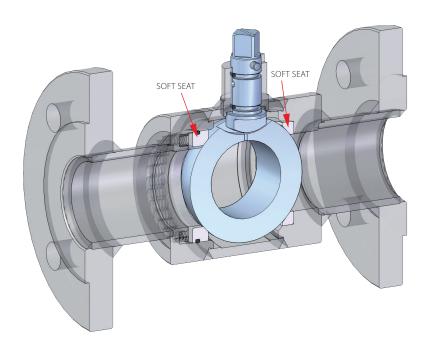
Allows the seal to regenerate in case of damage resulting from normal wear or from media contamination, by injecting a sealant, or, to clean the valve by injecting a flushing agent.

It also facilitates the operation of the valve after a long a period of inoperability.



Soft sealing system

The sealing materials are selected according to application requirements and are based on a customer's technical specifications.

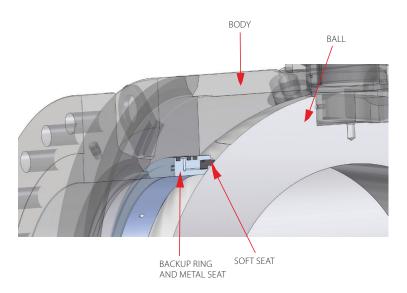




Primary metal secondary soft sealing system (PMSS)

The first sealing concerns the metal surface, while the second concerns the soft sealing, guaranteeing the tightness of the valve.

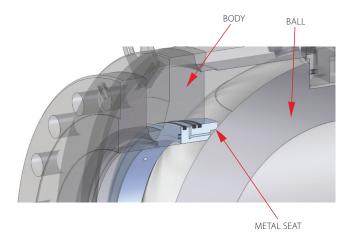
The PMSS type sealing is applied to the valves with a trunnion mounted ball.



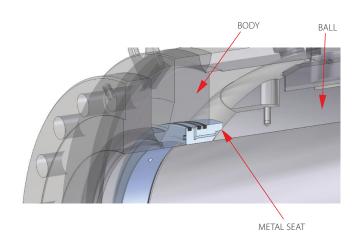
Metal / metal sealing system

The cooperating metal sealing surface are covered with special coating, which allows for long, effective and defect-free operation and sealing.

CLOSED POSITION



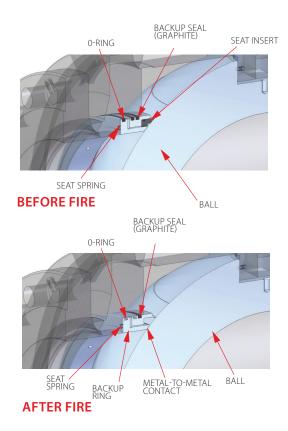
OPEN POSITION



Fire safe

The Fire Safe solution is based on Metal / Metal and Graphite sealing elements.

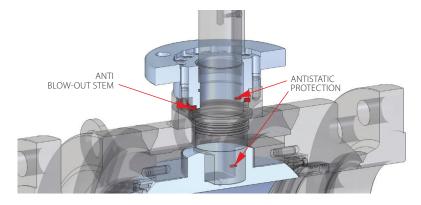




Antistatic protection and blow out proof stem design

The antistatic design protects against static electric discharge.

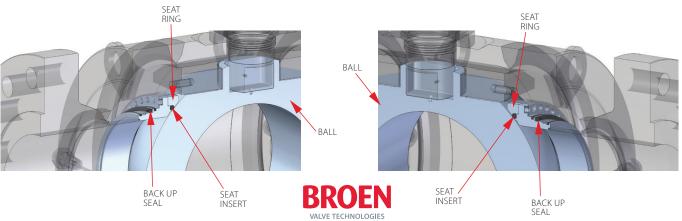
The anti blow-out design prevents the stem from blowing out after disassembly of the stem sealing top cover while the valve is under pressure.



Double piston effect sealing system (DPE)

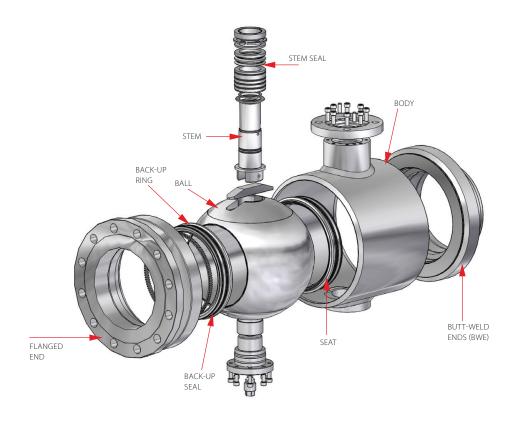
Both seals in the valves with "Double Piston Effect" (DPE) actively participate in the internal sealing of the valve.

The body cavity pressure activates sealing on the downstream side which provides double sealing prior to cavity pressure relief taking place.



Ball Valve

Class 150 | Class 300 | Class 600



MATERIALS

SIZE *	BODY	FLANGED END	BUTT-WELD ENDS (BWS)	BALL	STEM	BACK-UP RING	SEAT	BACK-UP SEAL	STEM SEAL
1/2" 3/4" 1" 1 1/4" 1 1/2" 2" 2 1/2" 3" 4" 6" 8" 10" 12" 14" 16" 20" 24" 28" 32"	A106 Gr. B; A105; A350 LF2	A105 A350 LF2	A106 Gr. B	AISI304 A350 LF2 + Ni-Cr; A350 LF2 + EN	AISI420	CS + Ni-Cr SS CS + EN	PTFE; PTFE+C	HNBR; EPDM; FKM; GRAPHITE	HNBR; EPDM; FKM; GRAPHITE; PTFE

* CLASS 600 - 1/2" to 20"

CL150 | 300

TEMPERATURE RANGE [°F]

t= -20°F to +212°F t= -20°F to +302°F CL600

TEMPERATURE RANGE [°F]

t= -20°F to +212°F

DIMENSIONS [inch] CLASS 150 SIZE d F t

SIZE	d	F	t		L		В	I	D1	Т	V	Veight (lb:	s)
1/2//	0.6	Х		FxF	WxW	GxG	1.5	0.0	0.0	0.1	FxF	WxW	GxG
1/2" 3/4" 1" 1 1/4" 1 1/2" 2" 2 1/2"	0,6	X	-	4,3	5,5	3,9	1,5	0,8	0,8	0,1	4,9	2,9	2,9
3/4"	0,8	Х	-	4,6	6,0	4,3	1,6	0,9	1,1	0,1	6,6	3,9	3,6
1"	1,0	Х	-	5,0	6,5	5,3	1,9	1,2	1,4	0,2	11,9	7,3	7,5
1 1/4"	1,3	Х	-	5,5	7,0	5,9	3,3	1,4	1,7	0,2	10,9	6,6	6,8
1 1/2"	1,6	Х	-	6,5	7,5	6,3	3,4	1,6	1,9	0,1	15,8	8,5	8,5
2"	2,0	Х	Х	7,0	8,5	6,3	3,7	1,9	2,4	0,2	22,1	11,7	12,4
2 1/2"	2,5	X	-	7,5	9,5	8,3	4,8	2,3	3,0	0,2	36,2	20,4	22,8
3″	3,1	Х	Х	8,0	11,1	-	5,1	2,8	3,5	0,2	45,9	32,8	-
4"	4,0	X -	x	9,0	12,0	-	6,8	3,5	4,5	0,2	85,1 111,8	68,0 72,9	-
6"	6,0	X -	x	15,5	18,0	-	10,0	5,4	6,6	0,3	235,7 240,6	192,0 196,8	-
8"	8,0	-	Х	18,0	20,5	-	9,9	8,0	8,6	0,3	359,6	315,9	-
10"	10,0	-	X	21,0	23,6	-	12,4	9,8	10,7	0,4	663,4	583,2	-
12"	12,0	-	Х	24,0	25,0	-	14,0	11,3	12,8	0,4	1134,8	1023,0	-
14"	13,2	-	X	27,0	30,0	-	14,9	12,2	14,0	0,4	1443,4	1353,5	-
16"	15,2	-	X	30,0	33,0	-	17,0	18,9	16,0	0,5	2357,1	2187,0	-
20"	19,2	-	X	36,0	39,0	-	22,1	22,4	20,0	0,5	4131,0	3912,3	-
24"	23,1	-	X	42,0	45,0	-	25,7	26,9	24,0	0,5	6658,2	6245,1	-
28"	26,9	-	X	49,0	53,0	-	31,7	31,1	28,0	0,6	10594,8	10026,2	-
32"	30,7	-	X	54,0	60,0	-	35,0	35,4	32,0	0,6	15299,3	14932,4	-

NPS	d	F	t		L		В	ı	D1	Т	'	Neight (kg	j)
1/2//	15	Х		FxF	WxW	GxG	27.0	21.0	21.2	2.2	FxF	WxW	GxG
1/2"	15	^	-	108,0	140,0	100,0	37,0	21,0	21,3	3,2	2,0	1,2	1,2
3/4"	20	Х	-	117,0	152,0	110,0	40,0	24,0	26,9	3,6	2,7	1,6	1,5
1"	25	Х	-	127,0	165,0	135,0	48,0	30,0	35,0	5,0	4,4	3,0	3,1
1 1/4"	32	Х	-	140,0	178,0	150,0	83,0	35,0	42,4	3,6	4,5	2,7	2,8
1 1/2"	40	Х	-	165,0	190,0	160,0	87,0	40,0	48,3	3,6	6,5	3,5	3,9
2"	50	Х	Х	178,0	216,0	160,0	95,0	48,0	60,3	4,0	9,1	4,8	5,1
2 1/2"	64	Х	-	190,0	241,0	210,0	122,0	59,0	76,1	5,0	14,9	8,4	9,4
3″	78	Х	Х	203,0	283,0	-	130,0	71,0	88,9	5,6	18,9	13,5	-
4"	101	X -	x	229,0	305,0	-	173,0	90,0	114,3	6,0	35,0 46,0	28,0 30,0	-
6"	152	X	x	394,0	457,0	-	253,0	137,0	168,3	7,1	97,0 99,0	79,0 81,0	-
8″	202	-	X	457,0	521,0	-	252,0	203,0	219,1	8,8	148,0	130,0	-
10"	253	-	Х	533,0	599,0	-	315,0	248,0	273,0	10,0	273,0	240,0	-
12"	304	-	X	610,0	635,0	-	355,0	288,0	323,9	10,0	467,0	421,0	-
14"	336	-	X	686,0	762,0	-	378,0	311,0	355,6	11,0	594,0	557,0	
16"	386	-	X	762,0	838,0	-	433,0	480,0	406,4	12,5	970,0	900,0	-
20"	488	-	X	914,0	991,0	-	561,0	570,0	508,0	12,5	1700,0	1610,0	-
24"	588	-	X	1067,0	1143,0	-	654,0	682,0	610,0	12,5	2740,0	2570,0	-
28"	684	-	X	1245,0	1346,0	-	806,0	790,0	711,0	14,2	4360,0	4126,0	-
32"	780	-	X	1372,0	1524,0	-	890,0	900,0	813,0	16,0	6296,0	6145,0	-

ADDITIONAL COMMENTS:

Flange dimension acc. to ASME B 16.5; ASME B 16.47 Flanges standard sealing surface: RF acc. to ASME B 16.5, ASME B 16.47 Butt-Weld Ends acc. to ASME B 16.25 Dimensions D1 and T to agree Threaded end acc. to ISO 228-1 or ASME B1.20.1

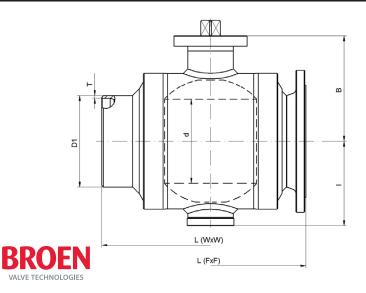
X = AvailableF = Floating ball

t = Trunnion mounted ball

FxF = Flanged ends

WxW = Butt-Weld ends

GxG = Threaded ends



DIMENSIONS [inch] CLASS 300 F SIZE d L В D1 Т t Weight (lbs) FxF WxW GxG FxF WxW GxG 1/2" 0,6 Χ 1,5 0,8 0,8 0,1 5,5 6,1 2,9 2,9 5,5 3,9 0,1 9,5 3,9 3,6 0,8 Χ 6,0 0,9 3/4" 6,0 4,3 1,6 1,1 Χ 5,3 1,9 1,2 1,4 0,2 13,9 7,3 7,5 1" 1,0 6,5 6,5 6,8 1 1/4" 1,3 Χ 7,0 7,0 5,9 3,3 1,4 1,7 0,2 15,3 6,6 Χ 7,5 7,5 0,1 20,9 8,5 1 1/2" 1,6 6,3 3,4 1,6 1,9 9,5 2,0 Х 8,5 8,5 6,3 3,7 1,9 2,4 0,2 11,7 12,4 2" 26,2 Χ 2 1/2 2,5 9,5 9,5 8,3 4,8 2,3 3,0 0,2 42,0 20,4 22,8 Χ Χ 11,1 11,1 5,1 2,8 0,2 3" 3,1 3,5 63,7 32,8 68,0 72,9 116,6 140,9 Χ X 12,0 6,8 3,5 4,5 0,2 4" 4,0 12,0 _ 192,0 269,7 Χ _ 6" 6,0 Χ 15,9 18,0 _ 10,0 5,4 6,6 0,3 274,6 196,8 8" 8,0 Χ 19,8 20,5 9,9 8,0 8,6 0,3 425,3 315,9 10" 10,0 Χ 22,4 22,0 12,4 9,8 10,7 0,4 753,3 583,2 1253,9 1023,0 14,0 25,5 25.0 11,3 0,4 12" 12,0 X 12,8 1353,5 14" 13,2 30,0 30,0 14,9 12,2 14,0 0,4 1686,4 16" 15,2 Χ 33,0 33,0 17,0 18,9 16,0 0,5 2624,4 2187,0 Χ 4532,0 3912,3 20" 19,2 39,0 39,0 22,1 22,4 20,0 0,5 24" 25,7 31,7 26,9 31,1 0,5 0,6 7265,7 6245,1 23,1 Χ 45,0 53,0 45,0 24,0 28,0 28" 53,0 11367,5 17782,7 10026,2 26,9

35,0

35,4

32,0

0,6

14932,4

60,0

60,0

Χ

DIME	NSIONS	[mm]	CLASS 3	300									
NPS	d	F	t		L		В	I	D1	Т	,	Weight (kg	g)
1/2"	15	Х		FxF	WxW	GxG	37,0	21,0	21.2	3,2	FxF	WxW	GxG
1/2	15	^	-	140,0	140,0	100,0	37,0	21,0	21,3	3,2	2,5	1,2	1,2
3/4"	20	Х	-	152,0	152,0	110,0	40,0	24,0	26,9	3,6	3,9	1,6	1,5
1″	25	Х	-	165,0	165,0	135,0	48,0	30,0	35,0	5,0	5,7	3,0	3,1
1 1/4"	32	Х	-	178,0	178,0	150,0	83,0	35,0	42,4	3,6	6,3	2,7	2,8
1 1/2"	40	Х	-	190,0	190,0	160,0	87,0	40,0	48,3	3,6	8,6	3,5	3,9
2"	50	Х	X	216,0	216,0	160,0	95,0	48,0	60,3	4,0	10,8	4,8	5,1
2 1/2"	64	Х	-	241,0	241,0	210,0	122,0	59,0	76,1	5,0	17,3	8,4	9,4
3"	78	Х	X	283,0	283,0	-	130,0	71,0	88,9	5,6	26,2	13,5	-
4"	101	X	X	305,0	305,0	-	173,0	90,0	114,3	6,0	48,0 58,0	28,0 30,0	-
6"	152	X	X	403,0	457,0	-	253,0	137,0	168,3	7,1	111,0 113,0	79,0 81,0	-
8"	202	-	X	502,0	521,0	-	252,0	203,0	219,1	8,8	175,0	130,0	-
10"	253	-	X	568,0	559,0	-	315,0	248,0	273,0	10,0	310,0	240,0	-
12"	304	-	X	648,0	635,0	-	355,0	288,0	323,9	10,0	516,0	421,0	-
14"	336	-	X	762,0	762,0	-	378,0	311,0	355,6	11,0	694,0	557,0	-
16"	386	-	X	838,0	838,0	-	433,0	480,0	406,4	12,5	1080,0	900,0	-
20"	488	-	X	991,0	991,0	-	561,0	570,0	508,0	12,5	1865,0	1610,0	-
24"	588	-	X	1143,0	1143,0	-	654,0	682,0	610,0	12,5	2990,0	2570,0	-
28"	684	-	X	1346,0	1346,0	-	806,0	790,0	711,0	14,2	4678,0	4126,0	-
32"	780	-	X	1524,0	1524,0	-	890,0	900,0	813,0	16,0	7318,0	6145,0	-

ADDITIONAL COMMENTS:

Flange dimension acc. to ASME B 16.5; ASME B 16.47 Flanges standard sealing surface: RF acc. to ASME B 16.5, ASME B 16.47 Butt-Weld Ends acc. to ASME B 16.25 Dimensions D1 and T to agree Threaded end acc. to ISO 228-1 or ASME B1.20.1

X = AvailableF = Floating ball

32"

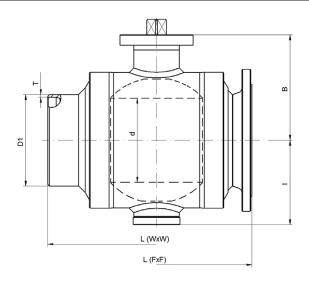
30,7

t = Trunnion mounted ball

FxF = Flanged ends

WxW = Butt-Weld ends

GxG = Threaded ends



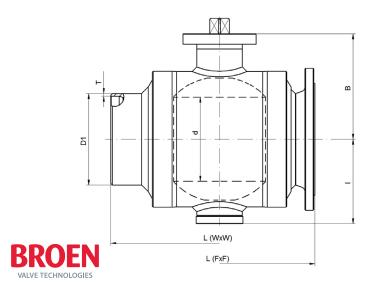
DIMENSIONS [inch] CLASS 600 F SIZE d t L В D1 Т Weight (lbs) FxF WxW GxG FxF WxW GxG 1/2" 0,6 Χ 1,7 0,8 0,8 0,1 7,0 2,9 6,5 6,5 3,9 3,4 0,8 1.9 0,9 1,1 0,1 3/4" Χ 7,5 7,5 4,3 11,2 4,9 3,9 1,0 Χ 8,5 8,5 5,3 0,2 7,5 1" 2,4 1,2 1,4 16,5 9,0 1 1/4" 1,3 Χ 9,0 9,0 3,3 1,5 1,8 0,2 28,9 14,1 Χ 39,1 19,2 1 1/2" 1,6 9,5 9,5 3,4 1,8 2,0 0,2 2,1 2,5 25,8 Χ 2" 2,0 11,5 4,8 2,4 0,2 48,6 11,5 Χ 46,2 2,6 3,0 75,3 34,7 Χ 2 1/2" 13,0 13,0 5,2 3,0 0,3 2,5 Χ 87,5 36,5 5,6 97,2 Χ 14.0 14,0 3,5 0,2 3" 60,8 3,1 4,9 6,7 4" 17,0 17,0 4,5 0,3 204,1 116,6 4,0 Χ 5,6 6" 6.0 Χ 22.0 22.0 9,0 7,5 6,6 0,3 432.5 281,9 8" 8,0 26,0 26,0 11,4 13,8 8,6 0,3 976,9 772,7 Χ 10,7 10,0 Χ 31,0 31,0 12,9 0,5 1652,4 1244,2 10" 16,9 12" 12,0 Χ 33,0 33,0 15,6 18,5 12,9 0,4 2500,5 2075,2 3005,9 2556,4 14" 13,2 35,0 19,3 Χ 35,0 16,4 14,0 0,3 16" 15,2 39,0 19,2 20,8 16,1 0,6 4417,7 3803,0 39,0 19,3 47,0 47,0 24,0 23,7 20,0 0,6 7878,1 6964,4 20" X

DIMEN	NSIONS	[mm]	CLASS 6	500									
NPS	d	F	t		L		В	I	D1	Т	\	Weight (kg)	
1/2//	15	Х		FxF	WxW	GxG	44	21	21.2	2.0	FxF	WxW	GxG
1/2"	15	^	-	165	165	100	44	21	21,3	2,9	2,9	1,4	1,2
3/4"	20	Х	-	190	190	110	47	24	26,9	3,2	4,6	2,0	1,6
1″	25	Х	-	216	216	135	60	30	35,0	4,5	6,8	3,7	3,1
1 1/4"	32	Х	-	229	229	-	83	38	44,5	5,0	11,9	5,8	-
1 1/2"	40	Х	-	241	241	-	87	45	51,0	5,0	16,1	7,9	-
2"	50	X	X	292	292	-	121	53 63	60,3	5,0	20,0 20,0	10,6 19,0	-
2 1/2"	64	X	X	330	330	-	132	67 75	76,1	7,1	31,0 36,0	14,3 15,0	-
3″	78	-	X	356	356	-	143	124	88,9	6,3	40,0	25,0	-
4"	101	-	X	432	432		169	141	114,3	7,1	84,0	48,0	
6"	152	-	X	559	559	-	228	190	168,3	8,0	178,0	116,0	-
8″	202	-	X	660	660	-	290	350	219,1	8,8	402,0	318,0	-
10"	253	-	X	787	787	-	328	430	273,0	12,5	660,0	512,0	-
12"	304	-	X	838	838	-	395	470	327,9	10,0	1029,0	584,0	-
14"	335	-	X	889	889	-	416	490	355,6	8,0	1237,0	1052,0	-
16"	387	-	X	991	991	-	488	528	408,4	14,2	1818,0	1565,0	-
20"	489	-	X	1194	1194	-	610	602	508,0	16,0	3242,0	2866,0	-

ADDITIONAL COMMENTS:

Flange dimension acc. to ASME B 16.5, ASME B 16.47 Flanges standard sealing surface: RF acc. to ASME B 16.5, ASME B 16.47 Butt-Weld Ends acc. to ASME B 16.25 Dimensions D1 and T to agree Threaded end acc. to ISO 228-1 or ASME B1.20.1

X = Available F = Floating ball t = Trunnion mounted ball FxF = Flanged ends WxW = Butt-Weld ends GxG = Threaded ends





BROEN Valve Technologies

For nearly 70 years BROEN has been the global leader in the development and production of valve technology for the control of water, air, gas and oil. BROEN delivers complete solutions for HVAC building installations and is a leading supplier of district energy valves.

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